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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/746,228	12/26/2000	Toshitaka Nakamura	N02-125045M/KOH	1148

21254 7590 03/06/2003

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EXAMINER	
MARKHAM, WESLEY D	
ART UNIT	PAPER NUMBER
1762	19

DATE MAILED: 03/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-19

Office Action Summary	Application No.	Applicant(s)	
	09/746,228	NAKAMURA ET AL.	
	Examiner	Art Unit	
	Wesley D Markham	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 November 2002 and 16 December 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *08 November 2002* is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application (i.e., as paper #18 on 12/16/2002) after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/8/2002 (i.e., amendment C, paper #15) has been entered.

Response to Amendment

2. Acknowledgement is made of applicant's amendment C, filed as paper #15 on 11/8/2002, in which Claims 16, 17, 20, and 21 were amended. Claims 13 – 22 are currently pending in U.S. Application Serial No. 09/746,228, and an Office Action on the merits follows.

Drawings

3. The proposed drawing correction and/or the proposed substitute sheets of drawings (i.e., 1 sheet, amending the "REFLECTIVITY" axis in Figure 3), filed on 11/8/2002, has been approved by the examiner. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

Correction of Informalities -- 37 CFR 1.85

New corrected drawings must be filed with the changes incorporated therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

Corrections other than Informalities Noted by Draftsperson on form PTO-948.

All changes to the drawings, other than informalities noted by the Draftsperson, **MUST** be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.185(a). Failure to take corrective action within the set (or extended) period will result in **ABANDONMENT** of the application.

4. Applicant is reminded that the Patent and Trademark Office no longer makes drawing changes and that it is applicant's responsibility to ensure that the drawings are corrected in accordance with the instructions set forth above.

Claim Objections

5. Claims 17 and 21 are objected to because of the following informalities: Claims 17 and 21 recite, in part, "...after all of the high-refractive-index thin film is deposited." This phrase appears to contain a typographical / grammatical error. The applicant is suggested to amend the phrase to read, "...after all of the high-refractive-index thin films are deposited." Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. The rejection of Claims 16, 17, 20, and 21 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, set forth in paragraph 9 of the previous Office Action (i.e., the final Office Action, paper #11, mailed on 7/16/2002), is withdrawn in light of applicant's amendment C.

8. Claims 18 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention for the reasons set forth in paragraph 10 of the previous Office Action.

9. In regards to this issue, the applicant's arguments filed on 11/8/2002 have been fully considered but they are not persuasive. Specifically, regarding the 35 U.S.C. 112, second paragraph, rejection of Claims 18 and 22, the applicant argues that one of ordinary skill in the art would understand that the "additional method step" is the forming of a plasma display filter with the transparent laminate. In response, this argument still does not clarify the situation set forth by the examiner in paragraph 10 of the previous Office Action. Specifically, Claims 18 and 22 recite a method "further comprising forming a plasma display panel filter with the transparent laminate". The transitional phrase "further comprising" indicates that additional process steps are required. However, the claims do not set forth these steps. What other steps are necessary to form a plasma display panel (PDP) filter? Are there any other steps necessary at all, or is the transparent laminate itself sufficient to be a "plasma display panel filter"? It appears to the examiner that, by performing the process steps recited in independent Claims 13 and 14, a transparent laminate is formed that can be used as a PDP filter. If this is the case, what other process steps does the applicant intend to add to Claims 18 and 22 by reciting "forming of a plasma display filter with the transparent laminate"? As such, one skilled in the art would not be reasonably apprised of the scope of Claims 18 and 22, and therefore the claims are indefinite under 35 U.S.C. 112, second paragraph.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

11. Claims 13, 15, 17, and 18 are rejected under 35 U.S.C. 102(a) as being anticipated by Anzaki et al.(1) (EP 1 043 606 A1).

12. Regarding independent Claim 13, Anzaki et al.(1) teach a method for producing a transparent laminate, specifically an electromagnetic wave filter for a plasma display panel (Abstract and paragraph [0001]), the method comprising the steps of preparing a transparent substrate (paragraph [0018]), depositing a transparent dielectric layer having a refractive index of up to 2.7 (i.e., a "high refractive index" film) on the substrate, depositing a silver transparent conductive thin film on the dielectric layer, repeating the aforementioned steps three times to obtain three combination thin film layers on the substrate, and depositing another transparent dielectric layer (i.e., "high refractive index" film) on the combination thin film layers (paragraphs [0009], [0016], [0030], [0031], [0038], [0040] – [0047], [0058] – [0060], and [0074] – [0081]). The layers are deposited by a "vacuum dry process" such as sputtering (paragraphs [0038], [0046], [0048], [0074], [0075], and [0077]). Anzaki et al.(1) also teach that, when the silver transparent conductive thin films are deposited by the aforementioned vacuum dry process (i.e., sputtering), the

substrate is advantageously heated to 100° C (i.e., 373 K) or higher (paragraph [0075]). The temperature explicitly taught by Anzaki et al.(1) (i.e., 373 K) is directly within the applicant's claimed temperature range of 340 to 410 K. Regarding Claims 15 and 17, Anzaki et al.(1) also teach depositing a low-refractive-index transparent thin film, such as a protective resin film that has a refractive index of, for example, as low as 1.40 (paragraphs [0034] and [0035]). The low-refractive-index film (i.e., the resin film) is deposited after all of the high-refractive index thin films are deposited (i.e., on the surface of the light transmitting electromagnetic wave shield film) (paragraphs [0034] and [0035]). Please note that a refractive index of 1.40 is considered by the applicant to be a low-refractive-index (page 21, lines 20 – 21 of the applicant's specification). Regarding Claim 18, Anzaki et al.(1) also teach forming a plasma display panel (PDP) filter with the transparent laminate (Abstract and paragraph [0001]).

13. Please note that the applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

16. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anzaki et al.(1) (EP 1 043 606 A1) in view of Okamura et al. (USPN 6,104,530).

17. Anzaki et al.(1) teach all the limitations of Claim 16 as set forth above in paragraph 12, except for a method wherein the low-refractive index transparent thin film is deposited before any high-refractive index thin film is deposited. However, Anzaki et al.(1) do teach that an antireflective surface treatment can be applied to the surface of the transparent substrate before applying the electromagnetic wave shield film (i.e., before the any high-refractive index thin film is deposited) (paragraph [0062]). Anzaki et al.(1) do not explicitly teach that the antireflective surface treatment comprises a low-refractive index transparent thin film. However, Okamura et al. teach that, in the art of producing transparent laminates for PDP filters (i.e., a process analogous to both that of Anzaki et al.(1) and the applicant), antireflection films may comprise a low refractive index layer such as magnesium fluoride or

silicon oxide (Col.21, lines 13 – 36) and are utilized to prevent lighting equipment from being mirrored in the display screen and making the presented image hard to see (Col.20, lines 9 – 11). Therefore, it would have been obvious to one of ordinary skill in the art to utilize a low refractive index layer such as magnesium fluoride or silicon oxide as the antireflective layer on the substrate of Anzaki et al.(1) with the reasonable expectation of (1) success, as Anzaki et al.(1) teach antireflective surface treatments in general for PDP filters and Okamura et al. teach that low refractive index layers of magnesium fluoride or silicon oxide are suitable as antireflective layers, and (2) obtaining the benefits of using an antireflective film, such as preventing lighting equipment from being mirrored in the display screen and making the presented image hard to see. Please note that magnesium fluoride and silicon oxide are disclosed by the applicant as examples of low-refractive index thin films (page 22, lines 12 – 14 of the applicant's specification).

18. Claims 14, 19, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anzaki et al.(1) (EP 1 043 606 A1) in view of Noreika et al. (USPN 3,915,764) and either Nulman (USPN 5,754,297) or Shiroishi et al. (USPN 4,833,020).
19. Anzaki et al.(1) teach all the limitations of Claim 14 as set forth in paragraph 12 above, except that (1) the deposition rate R (nm/sec) of the silver films is set to be R = (1/40) x (T – 300) $\pm$ 0.5. Please note that the temperature taught by Anzaki et al.(1) during the silver thin film sputtering process (i.e., 373 K) is within the

applicant's claimed temperature range of 340 K – 390 K. Anzaki et al.(1) are silent as to the deposition rate of the silver films. However, Anzaki et al.(1) are particularly concerned with the thickness of the silver films (paragraph [0031]). Noreika et al. teach that, in the art of depositing films by a sputtering process (i.e., the process taught by Anzaki et al.(1) to deposit the silver films), deposition rate is a controllable variable and is dependent on substrate temperature (Col.4, lines 43 – 53). Both Nulman and Shiroishi et al. teach that the deposition rate in a sputtering process is an important processing characteristic and can be determined experimentally (i.e., is a result / effective variable) (Col.3, lines 12 – 26 of Nulman, and Col.3, lines 14 – 16, 23 – 25, and 55 – 62 of Shiroishi et al.). Therefore, it would have been obvious to one of ordinary skill in the art to optimize the deposition rate as a result / effective variable in the silver film sputtering process of Anzaki et al.(1) through routine experimentation with the reasonable expectation of (1) success, as Noreika et al. teach that deposition rate is a controllable variable in a sputtering process, and (2) obtaining the specific film thickness of each silver film as desired by Anzaki et al.(1) Please note that the discovery of an optimum value of a result / effective variable is generally considered to be within the skill of the art (*In re Boesch*, 205 USPQ 215 (CCPA 1980)). As Claims 19, 21, and 22 correspond to Claims 15, 17, and 18, respectively, Anzaki et al.(1) also teach all the limitations of Claims 19, 21, and 22 as set forth above in paragraph 12.

20. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anzaki et al.(1) (EP 1 043 606 A1) in view of Noreika et al. (USPN 3,915,764) and either Nulman (USPN 5,754,297) or Shiroishi et al. (USPN 4,833,020), and in further view of Okamura et al. (USPN 6,104,530).

21. The combination of Anzaki et al.(1), Noreika et al., and either Nulman or Shiroishi et al. teaches all the limitations of Claim 20 as set forth above in paragraph 19, except for a method wherein the low-refractive index transparent thin film is deposited before any of the high-refractive-index thin films are deposited. However, this limitation is rendered obvious in light of the teachings of Okamura et al. for the reasons set forth in paragraph 17 above.

22. Please note that the applicant cannot rely upon the foreign priority papers to overcome the rejections based on Anzaki et al.(1) (i.e., the rejections set forth in paragraphs 16 – 21 above) because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

23. Claims 13, 15, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anzaki et al. (USPN 6,316,110 B1).

24. Regarding independent Claim 13, Anzaki et al. teach a method for producing a transparent laminate, specifically an electromagnetic wave filter for a plasma display panel (Abstract), the method comprising the steps of preparing a transparent substrate (Col.1, lines 5 – 15, Col.3, lines 10 – 11), depositing a transparent dielectric layer having a refractive index of up to 2.8 (i.e., a "high refractive index"

film) on the substrate, depositing a silver transparent conductive thin film on the dielectric layer, repeating the aforementioned steps three times to obtain three combination thin film layers on the substrate, and depositing another transparent dielectric layer (i.e., "high refractive index" film) on the combination thin film layers (Col.3, lines 1 – 25, Col.4, lines 14 – 40, Col.5, lines 1 – 9, Col.6, lines 8 – 12 and 45 – 55, and Figure 2). The layers are deposited by a "vacuum dry process" such as sputtering (Col.6, lines 13 – 29). Anzaki et al. do not explicitly teach that the temperature of the substrate at the time of deposition of the silver films is between 340 K and 410 K, inclusive. However, Anzaki et al. do teach heating the substrate to a temperature of 300° C (i.e., 573 K) or lower during the silver film formation (Col.6, lines 20 – 23). The teaching of Anzaki et al. of a substrate temperature of 300° C or lower overlaps the applicant's claimed temperature range. Overlapping ranges are *prima facie* evidence of obviousness. It would have been obvious to one of ordinary skill in the art to have selected the portion of Anzaki et al.'s temperature range that corresponds to the applicant's claimed range (*In re Malagari*, 184 USPQ 549 (CCPA 1974)). Regarding Claims 15 and 17, Anzaki et al. also teach depositing a low-refractive-index transparent thin film, such as a protective resin film that has a refractive index of, for example, 1.58 (Col.5, lines 43 – 61). The low refractive index film (i.e., the resin film) is deposited after all of the high-refractive index thin films are deposited (Col.5, lines 62 – 65). Please note that a refractive index of 1.58 is considered by the applicant to be a low-refractive index (page 21, lines 20 – 21 of the applicant's specification). Regarding Claim 18, Anzaki et al. also teach forming a

plasma display panel (PDP) filter with the transparent laminate (Abstract and Col.1, lines 5 – 15).

25. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anzaki et al. (USPN 6,316,110 B1) in view of Okamura et al. (USPN 6,104,530).

26. Anzaki et al. teach all the limitations of Claim 16 as set forth in paragraph 24 above, except a method wherein the low-refractive index transparent thin film is deposited before any of the high-refractive index thin films are deposited. However, Anzaki et al. do teach that an antireflective surface treatment can be applied to the surface of the transparent substrate before applying the electromagnetic wave shield film (i.e., before any of the high-refractive index thin films are deposited) (Col.6, lines 30 – 35). Anzaki et al. do not explicitly teach that the antireflective surface treatment comprises a low-refractive index transparent thin film. However, Okamura et al. teach that, in the art of producing transparent laminates for PDP filters (i.e., a process analogous to both that of Anzaki et al. and the applicant), antireflection films may comprise a low refractive index layer such as magnesium fluoride or silicon oxide (Col.21, lines 13 – 36) and are utilized to prevent lighting equipment from being mirrored in the display screen and making the presented image hard to see (Col.20, lines 9 – 11). Therefore, it would have been obvious to one of ordinary skill in the art to utilize a low refractive index layer such as magnesium fluoride or silicon oxide as the antireflective layer on the substrate of Anzaki et al. with the reasonable expectation of (1) success, as Anzaki et al. teach antireflective surface

treatments in general for PDP filters and Okamura et al. teach that low refractive index layers of magnesium fluoride or silicon oxide are suitable as antireflective layers, and (2) obtaining the benefits of using an antireflective film, such as preventing lighting equipment from being mirrored in the display screen and making the presented image hard to see. Please note that magnesium fluoride and silicon oxide are disclosed by the applicant as examples of low-refractive index thin films (page 22, lines 12 – 14 of the applicant's specification).

27. Claims 14, 19, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anzaki et al. (USPN 6,316,110 B1) in view of Noreika et al. (USPN 3,915,764) and either Nulman (USPN 5,754,297) or Shiroishi et al. (USPN 4,833,020).

28. Anzaki et al. teach all the limitations of Claim 14 as set forth in paragraph 24 above, except that (1) the temperature of substrate at the time of the deposition of the silver films is between 340 K and 390 K, inclusive, and (2) the deposition rate R (nm/sec) of the silver films is set to be $R = (1/40) \times (T - 300) \pm 0.5$. However, Anzaki et al. do teach heating the substrate to a temperature of 300° C (i.e., 573 K) or lower during the silver film formation (Col.6, lines 20 – 23). The teaching of Anzaki et al. of a temperature of 300° C or lower overlaps the applicant's claimed temperature range. Overlapping ranges are *prima facie* evidence of obviousness. It would have been obvious to one of ordinary skill in the art to have selected the portion of Anzaki et al.'s temperature range that corresponds to the applicant's claimed range (*In re*

Malagari, 184 USPQ 549 (CCPA 1974)). Anzaki et al. are silent as to the deposition rate of the silver films. However, Anzaki et al. are particularly concerned with the thickness of the silver films (Col.4, lines 15 – 40). Noreika et al. teach that, in the art of depositing films by a sputtering process (i.e., the process taught by Anzaki et al. to deposit the silver films), deposition rate is a controllable variable and is dependent on substrate temperature (Col.4, lines 43 – 53). Both Nulman and Shiroishi et al. teach that the deposition rate in a sputtering process is an important processing characteristic and can be determined experimentally (i.e., is a result / effective variable) (Col.3, lines 12 – 26 of Nulman, and Col.3, lines 14 – 16, 23 – 25, and 55 – 62 of Shiroishi et al.). Therefore, it would have been obvious to one of ordinary skill in the art to optimize the deposition rate as a result / effective variable in the silver film sputtering process of Anzaki et al. through routine experimentation with the reasonable expectation of (1) success, as Noreika et al. teach that deposition rate is a controllable variable in a sputtering process, and (2) obtaining the specific film thickness of each silver film as desired by Anzaki et al. Please note that the discovery of an optimum value of a result / effective variable is generally considered to be within the skill of the art (*In re Boesch*, 205 USPQ 215 (CCPA 1980)). As Claims 19, 21, and 22 correspond to Claims 15, 17, and 18, please see paragraph 24 above for the appropriate teachings in Anzaki et al.

29. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anzaki et al. (USPN 6,316,110 B1) in view of Noreika et al. (USPN 3,915,764) and either

Nulman (USPN 5,754,297) or Shiroishi et al. (USPN 4,833,020), and in further view of Okamura et al. (USPN 6,104,530).

30. The combination of Anzaki et al., Noreika et al., and either Nulman or Shiroishi et al. teaches all the limitations of Claim 20 as set forth above in paragraph 28, except for a method wherein the low-refractive index transparent thin film is deposited before any of the high-refractive index thin films are deposited. However, this limitation is rendered obvious in light of the teachings of Okamura et al. for the reasons set forth in paragraph 26 above.

31. Claims 13 and 15 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamura et al. (USPN 6,104,530) in view of Kenzo et al. (JP 09-176837 A).

32. Regarding Claim 13, Okamura et al. teach a method of producing a transparent laminate, specifically an optical filter (Abstract), the method comprising the steps of preparing a transparent substrate (Abstract), depositing a high refractive index transparent film, depositing a silver transparent conductive film on the high refractive index transparent film, repeating the aforementioned deposition steps three to six times to form three to six combination thin film layers on the substrate, and depositing another high-refractive index transparent film on the surface of the combination thin film layers (Abstract, Col.4, lines 38 – 54, Col.5, lines 1 – 5, Cols.6 – 7, Col.9, lines 18 – 67, Col.27, lines 6 – 67, Col.28, lines 1 – 14, and Figure 2). The layers are deposited by a "vacuum dry process" such as sputtering (Col.11, lines 45 – 67, and Col.12, lines 1 – 8). Okamura et al. do not explicitly teach that the

substrate has a temperature of between 340 K and 410 K, inclusive, at the time of the deposition of the silver films. Specifically, Okamura et al. are silent as to the substrate temperature during the deposition of the silver films in the sputtering process of their invention. Kenzo et al. teach a similar method of forming a transparent laminate by sandwiching a silver layer between two high refractive index oxide layers (paragraphs [0011], [0018], and Figure 1). The layers are all formed by a sputtering process (i.e., the same process taught by Okamura et al. to form the layers) (paragraph [0022]). In addition, Kenzo et al. teach that the sputtering process for forming all the layers (including the silver layer) is performed at a substrate temperature between room temperature and 180° C (paragraph [0022]). Therefore, it would have been obvious to one of ordinary skill in the art to choose the substrate temperature taught by Kenzo et al. (i.e., between room temperature and 180° C) when performing the silver film deposition process of Okamura et al. with the reasonable expectation of success (i.e., successfully depositing the silver film by sputtering as desired by Okamura et al. at an operable substrate temperature as taught by Kenzo et al.). In addition, the teaching of Kenzo et al. of a substrate temperature of between room temperature and 180° C overlaps the applicant's claimed temperature range. Overlapping ranges are *prima facie* evidence of obviousness. It would have been obvious to one of ordinary skill in the art to have selected the portion of Kenzo et al.'s temperature range that corresponds to the applicant's claimed range (*In re Malagari*, 184 USPQ 549 (CCPA 1974)). Further, regarding Claims 15 – 17, Okamura et al. teach that

antireflective films comprising low-refractive index transparent thin films such as magnesium fluoride or silicon oxide can be formed either (1) on the transparent substrate (i.e., before the deposition of the multi-layer film, and thus before the deposition of any high-refractive index thin film) or (2) on the multi-layer film (i.e., after the deposition of all of the high-refractive index thin films) (Col.21, lines 13 – 50). Regarding Claim 18, Okamura et al. also teach forming a PDP filter with the transparent laminate (Abstract).

33. Claims 14 and 19 – 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamura et al. (USPN 6,104,530) in view of Kenzo et al. (JP 09-176837 A), in further view of Noreika et al. (USPN 3,915,764) and either Nulman (USPN 5,754,297) or Shiroishi et al. (USPN 4,833,020).

34. The combination of Okamura et al. and Kenzo et al. teach all the limitations of Claim 14 as set forth in paragraph 32 above, except that (1) the temperature of substrate at the time of the deposition of the silver films is between 340 K and 390 K, inclusive, and (2) the deposition rate R (nm/sec) of the silver films is set to be $R = (1/40) \times (T - 300) \pm 0.5$. However, the teaching of Kenzo et al. of a substrate temperature of between room temperature and 180° C overlaps the applicant's claimed temperature range. Overlapping ranges are *prima facie* evidence of obviousness. It would have been obvious to one of ordinary skill in the art to have selected the portion of Kenzo et al.'s temperature range that corresponds to the applicant's claimed range (*In re Malagari*, 184 USPQ 549 (CCPA 1974)). Both

Okamura et al. and Kenzo et al. are silent as to the deposition rate of the silver films. However, Okamura et al. are concerned with the thickness of the silver films (Col.10, lines 34 – 47). Noreika et al. teach that, in the art of depositing films by a sputtering process (i.e., the process taught by Okamura et al. to deposit the silver films), deposition rate is a controllable variable and is dependent on substrate temperature (Col.4, lines 43 – 53). Both Nulman and Shiroishi et al. teach that the deposition rate in a sputtering process is an important processing characteristic and can be determined experimentally (i.e., is a result / effective variable) (Col.3, lines 12 – 26 of Nulman, and Col.3, lines 14 – 16, 23 – 25, and 55 – 62 of Shiroishi et al.). Therefore, it would have been obvious to one of ordinary skill in the art to optimize the deposition rate as a result / effective variable in the silver film sputtering process of Okamura et al. through routine experimentation with the reasonable expectation of (1) success, as Noreika et al. teach that deposition rate is a controllable variable in a sputtering process, and (2) obtaining the specific film thickness of each silver film as desired by Okamura et al. Please note that the discovery of an optimum value of a result / effective variable is generally considered to be within the skill of the art (*In re Boesch*, 205 USPQ 215 (CCPA 1980)). Further, regarding Claims 19 – 21, Okamura et al. teach that antireflective films comprising low-refractive index transparent thin films such as magnesium fluoride or silicon oxide can be formed either (1) on the transparent substrate (i.e., before the deposition of the multi-layer film, and thus before the deposition of any high-refractive index thin film) or (2) on the multi-layer film (i.e., after the deposition of all

of the high-refractive index thin films) (Col.21, lines 13 – 50). Regarding Claim 22, Okamura et al. also teach forming a PDP filter with the transparent laminate (Abstract).

Response to Arguments

35. Applicant's arguments filed on 11/8/2002 have been fully considered but they are not persuasive.

36. Specifically, all of the applicant's arguments were fully addressed in paragraphs 7 – 10 of the Advisory Action, paper #16, mailed on 11/22/2002. In addition, please note that the Anzaki et al.(1) reference (EP 1 043 606 A1) explicitly teaches a temperature of the substrate in the silver thin film sputtering process that is within the applicant's claimed range. Therefore, an attempt by the applicant to show criticality / unexpected results based on the claimed temperature range is not relevant to the rejections based on the Anzaki et al.(1) reference.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley D Markham whose telephone number is (703) 308-7557. The examiner can normally be reached on Monday - Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (703) 308-2333. The fax phone numbers

for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Wesley D Markham
Examiner
Art Unit 1762

WDM
February 27, 2003

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